IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1   1.   (Currently Amended) A method for generating a spot for use in halftoning,

2   comprising:

3   defining a spot function that combines two functions selected to provide

4   asymmetrically changing of the shape of a ~~predetermined~~ spot ~~shape~~ for use in a halftone

5   cell; ~~and~~

6   scaling the spot function according to grayscale levels using a parameterized spot

7   radius scaling function that varies according to a value of a first and second spot function

8   ordinate and ~~a~~ an asymmetric shape changing scaling function based on a gray level for the

9   spot, and

10   printing using the scaled spot function;

11   wherein the spot function is described by:

12
$$f(x,y) = \frac{1}{2}\left(\cos(\pi x / p_x) + \frac{1}{S(p,r)} \cos(\pi y / p_y) \right)$$

13   where x and y are the first and second spot function ordinates, p_x scales ordinate x, p_y scales

14   ordinate y, p is a spot shape parameter for controlling the shape of the spot, S(p,r) is a scaling

15   function, and r is the radius of the spot.

1   2.   (Previously Presented)   The method of claim 1, wherein the two

2   functions allow non-separable changes in spot shape.

1   3.   (Canceled)

2

·1   4.   (Canceled)   .

1   5.   (Previously Presented)   The method of claim 1, wherein the scaling

2   function, S(p,r), is described by:

$$S(p,r) = 1 + \frac{1}{p_m \sqrt{2\pi}} \exp\left(-\frac{\left(r/\sqrt{2}-1/2\right)^2}{2p^2}\right),$$

4   where p_m sets a maximum ellipticity of the spot.

1   6.   (Canceled)

1   7.   (Currently Amended) A printing system, comprising:

2   a control unit for receiving a print file and processing the print file for printing;

3   a print head for conveying a print job according to the print file; and

4   a device for generating a spot for use in halftoning wherein the halftoning reproduces

5   an image defined by the print file using the print head, the device defines a spot function that

6   combines two functions selected to provide <u>asymmetrically changing of the shape of</u> a

7   ~~predetermined~~ spot ~~shape~~ for use in a halftone cell and scales the spot function <u>according to</u>

8   <u>grayscale level</u> using a parameterized spot radius scaling function that varies according to a

9   value of a first and second spot function ordinate and ~~a~~ <u>an asymmetric</u> shape changing

10   scaling function <u>based on a gray level for the spot,</u>

11   wherein the spot function used by the device is described by:

12
$$f(x,y) = \frac{1}{2}\left(\cos(\pi x / p_x) + \frac{1}{S(p,r)} \cos(\pi y / p_y) \right)$$

13   where x and y are the first and second spot function ordinates, p_x scales ordinate x, p_y scales

14   ordinate y, p is a spot shape parameter for controlling the shape of the spot, S(p,r) is a scaling

15   function, and r is the radius of the spot.

1   8.   (Previously Presented)   The printing system of claim 7, wherein the two

2   functions allow non-separable changes in spot shape.

1   9.   (Canceled)

1   10.   (Canceled)

1   11. (Previously Presented)   The printing system of claim 7, wherein the

2 scaling function, S(p,r), is described by:

$$S(p,r) = 1 + \frac{1}{p_m\sqrt{2\pi}}\exp\left(-\frac{\left(r/\sqrt{2}-1/2\right)^2}{2p^2}\right),$$

4 where p_m sets a maximum ellipticity of the spot.

1   12. (Canceled)

1   13. (Previously Presented)   The printing system of claim 7, wherein the

2 device is a hardware card disposed between the control unit and the print head.

1   14. (Previously Presented)   The printing system of claim 7, wherein the

2 device is a hardware card disposed within the control unit.

1   15-16. (Canceled)

1   17.   (Currently Amended) ~~An article of manufacture comprising a~~ A program

2   storage medium readable by a computer, the medium tangibly embodying one or more

3   programs of instructions executable by the computer to perform ~~a method for~~ halftoning an

4   image <u>by</u>~~, the method comprising~~:

5   defining a spot function that combines two functions selected to provide

6   <u>asymmetrically changing of the shape of</u> a ~~predetermined~~ spot ~~shape~~ for use in a halftone

7   cell; ~~and~~

8   scaling the spot function <u>according to grayscale level</u> using a parameterized spot

9   radius scaling function that varies according to a value of a first and second spot function

10   ordinate and ~~a~~ <u>an asymmetric</u> shape changing scaling function <u>based on a gray level for the</u>

11   <u>spot, and</u>

12   <u>printing using the scaled spot function;</u>

13   wherein the spot function is described by:

$$f(x,y) = \frac{1}{2}\left(\cos(\pi x / p_x) + \frac{1}{S(p,r)} \cos(\pi y / p_y) \right)$$

15   where x and y are the first and second spot function ordinates, p_x scales ordinate x, p_y scales

16   ordinate y, p is a spot shape parameter for controlling the shape of the spot, $S(p,r)$ is a scaling

17   function, and r is the radius of the spot.

1   18.   (Currently Amended) The ~~article of manufacture~~ <u>program storage device</u> of

2   claim 17, wherein the two functions allow non-separable changes in spot shape.

1   19.   (Canceled)

1   20.   (Canceled)

1   21.   (Currently Amended) The ~~article of manufacture~~ <u>program storage device</u> of

2   claim 17, wherein the scaling function, S(p,r), is described by:

3

$$S(p,r) = 1 + \frac{1}{p_m\sqrt{2\pi}} \exp\left(-\frac{\left(r/\sqrt{2} - 1/2\right)^2}{2p^2}\right),$$

4   where p_m sets a maximum ellipticity of the spot.

1   22.   (Canceled)

7

23.   (Currently Amended) A printing system, comprising:

means for receiving a print file and processing the print file for printing;

means for conveying a print job according to the print file; and

means for generating a spot for use in halftoning wherein the halftoning reproduces an image defined by the print file using the print head, the means for generating a spot defines a spot function that combines two functions selected to provide <u>asymmetrically changing of the shape of</u> a ~~predetermined~~ spot ~~shape~~ for use in a halftone cell and scales the spot function <u>according to grayscale level</u> using a parameterized spot radius scaling function that varies according to a value of a first and second spot function ordinate and a <u>an asymmetric</u> shape changing scaling function <u>based on a gray level for the spot,</u>

wherein the spot function is described by:

$$f(x,y) = \frac{1}{2}\left(\cos(\pi x / p_x) + \frac{1}{S(p,r)} \cos(\pi y / p_y) \right)$$

where x and y are the first and second spot function ordinates, p_x scales ordinate x, p_y scales ordinate y, p is a spot shape parameter for controlling the shape of the spot, S(p,r) is a scaling function, and r is the radius of the spot.